



Arizona Mathematics Standards– 1st Grade Standards Placemat

Grade level content emphasis indicated by: ● Major Cluster; ▲ Supporting Cluster

1. Develop understanding of addition, subtraction, and strategies for addition and subtraction within 20.

Students develop strategies for adding and subtracting whole numbers. They use a variety of models to represent add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction (Table 1). Students understand connections between counting and addition and subtraction. They use properties of addition with whole numbers to solve addition and subtraction problems through 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

2. Develop competency of whole number relationships and place value, including grouping in tens and ones through 100.

Students work with whole numbers between 10 and 100 in terms of tens and ones. Through activities that build number sense and place value, they understand the order of the counting sequence, compare whole numbers through 100, and model addition and subtraction situations. Students develop, discuss, and use efficient, accurate, and flexible strategies to add within 100 and subtract multiples of 10.

3. Develop understanding of linear measurement.

Students develop an understanding of the meaning and processes of measurement, including iteration (finding the length of an object with repeated equal-sized units) and for indirect measurement (comparing the length of two objects using a third object).

Operations and Algebraic Thinking

● 1.OA.A Represent and solve problems involving addition and subtraction.

1.OA.A.1: Use addition and subtraction within 20 to solve word problems with unknowns in all positions (e.g., by using objects, drawings, and/or equations with a symbol for the unknown number to represent the problem). See Table 1.

1.OA.A.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20 (e.g., by using objects, drawings, and/or equations with a symbol for the unknown number to represent the problem). See Table 1.

● 1.OA.B Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.B.3: Apply properties of operations (commutative and associative properties of addition) as strategies to add and subtract through 20. (Students need not use formal terms for these properties.)

1.OA.B.4: Understand subtraction as an unknown-addend problem within 20 (e.g., subtract $10 - 8$ by finding the number that makes 10 when added to 8).

● 1.OA.C Add and subtract within 10.

1.OA.C.5: Relate counting to addition and subtraction (e.g., by using counting on 2 to add 2).

1.OA.C.6: Fluently add and subtract within 10.

1.OA.D Work with addition and subtraction equations.

1.OA.D.7: Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false (e.g., Which of the following equations are true and which are false? $6 + 1 = 6 - 1$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$).

1.OA.D.8: Determine the unknown whole number in an addition or subtraction equation relating three whole numbers (e.g., determine the unknown number that makes the equation true in each of the equations $8 + \square = 11$, $5 = \square - 3$, $6 + 6 = \square$).

Number and Operations in Base Ten

● 1.NBT.A Extend the counting sequence.

1.NBT.A.1: Count to 120 by 1's, 2's, and 10's starting at any number less than 100. In this range, read and write numerals and represent a number of objects with a written numeral.

● 1.NBT.B Understand place value.

1.NBT.B.2: Understand that the two digits of a two-digit number represent groups of tens and ones. Understand the following as special cases:

- 10 can be thought of as a group of ten ones — called a “ten”.
- The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.B.3: Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

● 1.NBT.C Use place value understanding and properties of operations to add and subtract.

1.NBT.C.4: Demonstrate understanding of addition within 100, connecting objects or drawings to strategies based on place value (including multiples of 10), properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written form. See Table 1.

1.NBT.C.5: Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.

1.NBT.C.6: Subtract multiples of 10 in the range of 10 to 90 (positive or zero differences), using objects or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written form.

Measurement and Data

● 1.MD.A Measure lengths indirectly and by iterating length units.

1.MD.A.1: Order three objects by length; compare the lengths of two objects indirectly by using a third object.

1.MD.A.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.)

1.MD.B Work with time and money.

1.MD.B.3a: Tell and write time in hours and half-hours using analog and digital clocks.

1.MD.B.3b: Identify coins by name and value (pennies, nickels, dimes and quarters).

1.MD.C Represent and interpret data.

1.MD.C.4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry

1.G.A Reason with shapes and their attributes.

1.G.A.1: Distinguish between defining attributes (triangles are closed and 3 sided) versus non-defining attributes (color, orientation, overall size) for two-dimensional shapes; build and draw shapes that possess defining attributes.

1.G.A.2: Compose two-dimensional shapes or three-dimensional shapes to create a composite shape.

1.G.A.3: Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters. Describe the whole as two of, or four of the shares. Understand that decomposing into more equal shares creates smaller shares.

Mathematical Practices

The Standards for Mathematical Practice complement the content standards so that students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle, and high school years.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Arizona is suggesting instructional time encompass a range of at least 65%-75% for Major Clusters and a range of 25%-35% for Supporting Cluster instruction.